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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/650,181 | 08/27/2003 | Masayuki Ohta | 259052003300 | 6464 |

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| EXAMINER |
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VAN ROY, TOD THOMAS

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| ART UNIT | PAPER NUMBER |
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2828

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,181

Applicant(s)

OHTA ET AL.

Examiner

Tod T. Van Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/27/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities:

Claim 7 depends from claim 6 which states "marker or markers", whereas claim 7 states "wherein the markers". It is believed that claim 7 should state "marker or markers" as in claim 6, and has been examined as such.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2-4, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-4 and 8 speak of the "pitch" of the mark or markers. Pitch is generally understood to describe an angled surface or the degree of angle of a surface. This is not believed to be the case as stated in these claims and in the specification (namely describing the pitch of rectangular makers, and associating the pitch as a length). This language is confusing, and correction and/or further explanation is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Goto (US 6850547).

With respect to claim 5, Goto discloses a semiconductor laser device, comprising: a semiconductor layer portion which includes at least a light emission layer (fig.5 #13) and has a pair of cleavage surfaces which are parallel to a chip-width direction and distant from each other by a predetermined resonator length (fig.5 facets A, B); and an electrode pattern piece formed on an upper surface of the semiconductor layer portion (fig.5 #6), wherein the electrode pattern piece comes in contact with the pair of cleavage planes at both of the edges of the electrode pattern piece extending in a chip-width direction (fig.5 #6 in contact with facets A and B).

With respect to claim 6, Goto discloses the electrode pattern piece to have a mark or markers in a predetermined shape (t shaped mark near facet A, best seen in top shaded portion of fig.6b) at one or both edges of the electrode pattern piece extending in a resonator length direction.

With respect to claim 7, Goto discloses that the marker is symmetric with respect to a center line of the electrode pattern piece extending in the resonator length direction, and asymmetric with respect to a line extending in the chip-width direction bisectioning

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the overall length of the marker (the marker is symmetric about resonator length bisecting line, and asymmetric about chip width bisecting line).

With respect to claim 8, Goto discloses the marker has a fixed pitch (same as marker length as understood from the specification, pg.20 lines 18-20) with the overall length of the marker in the resonator length direction set equal to L/n , n not being less than 1 (marker length not longer than resonator), and being set to be equal to the pitch of the markers.

With respect to claim 9, Goto discloses the marker corresponds to a position of a laser light-emitting channel (col.8 lines 50-57, marker near emitting facet A, channel seen as dashed lines in fig.5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goto in view of Ohbuchi (US 6611542).

With respect to claim 1, Goto teaches a method for manufacturing a semiconductor laser device, comprising the steps of: forming an electrode pattern on an upper surface of a semiconductor wafer stacked above at least a light emission layer (col.10 lines 35-41); cutting the resultant semiconductor wafer for predetermined width (col.10 lines 58-62), wherein the electrode pattern formed in the step of forming an electrode pattern is continuous at least in a resonator-length direction (as seen in fig.5). Goto does not teach cutting the wafer to yield a plurality of semiconductor bars; and sectioning the semiconductor bars into a desired size to form semiconductor laser devices each having a pair of cleavage surfaces which are parallel to a chip-width direction and distant from each other by a predetermined resonator length. Ohbuchi teaches a semiconductor laser device with electrode markers (seen in fig.2b to be substantially covering the entire surface of the wafer) wherein the wafer is cut to yield a plurality of semiconductor bars (fig.2d, col.6 lines 53-57, row seen at a fixed row pitch); and sectioning the semiconductor bars into a desired size to form semiconductor laser devices (fig.2g, col.6 lines 62-66) each having a pair of cleavage surfaces which are parallel to a chip-width direction and distant from each other by a predetermined resonator length. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of Goto with the cleaving method of Ohbuchi in order to concisely separate individual laser devices from the entire wafer grown structure and maximize usable wafer area.

With respect to claim 2, Goto and Ohbuchi teach the method as outlined in the rejection to claim 1, and Goto further discloses forming markers in a predetermined shape (fig.5) at a pitch not greater than a resonator length (see claim 8 rejection) at one or both edges of the electrode patterns extending in the resonator length direction (marker at edge near facet A).

With respect to claim 3, Goto and Ohbuchi teach the method as outlined in the rejection to claim 1, including the electrode structure to cover the substantially entire surface of the wafer (see claim 1 rejection) and Goto further discloses openings to be markers be formed on the wafer (col.10 lines 34-41, speaking methods of forming the opens for the t patterns), sectioning the electrode pattern at intervals each of a chip width and at a pitch not greater than a resonator length in a resonator direction.

With respect to claim 4, Goto and Ohbuchi teach the method as outlined in the rejection to claim 1, including the electrode structure to cover the substantially entire surface of the wafer (see claim 1 rejection) and Goto further discloses markers to be formed at corresponding positions of laser light emitting channels of the electrode pattern (see claim 9 rejection) in the chip width direction at a pitch equal to a chip width and at a pitch not greater than a resonator length in the resonator length direction (Goto, fig.5).

With respect to claim 10, Goto teaches the semiconductor laser device as outlined in the rejection to claims 6 and 9, but does not teach the marker length to width ratio is between 1:5 to 5:1. Ohbuchi teaches a semiconductor laser device with electrode markers wherein it is taught that marker side dimensions should be 20um or

greater (fig.4 E, col.8 lines 12-14). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the t pattern of Goto with the 20um sides dimensions of Ohbuchi in order to allow for ease of viewing during alignment procedures (Ohbuchi, col.8 lines 12-14, col.3 lines 39-45). (20um side dimensions applied to each exposed section of Goto's t-pattern would lead to a 60 micron chip-width by a 40 um resonator length direction, giving a marker length to width ratio of 2:3, which falls in the 1:5 to 5:1 range)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**MINSUN OH HARVEY
PRIMARY EXAMINER**